



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/687,416	10/16/2003	Karl Thompson	1410-CA	7978
20284	7590	12/05/2005	EXAMINER	
CIRRUS LOGIC, INC. CIRRUS LOGIC LEGAL DEPARTMENT 2901 VIA FORTUNA AUSTIN, TX 78746				NGUYEN, KHANH V
		ART UNIT		PAPER NUMBER
		2817		

DATE MAILED: 12/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/687,416	THOMPSON ET AL.	
	Examiner Khanh V. Nguyen	Art Unit 2817	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 17 November 2005.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-24 is/are pending in the application.
  - 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-4, 11-14, 21 and 23 is/are rejected.
- 7) Claim(s) 5-9, 15-19 and 22, 24 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    - a) All    b) Some \* c) None of:
      1. Certified copies of the priority documents have been received.
      2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
      3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                    | Paper No(s)/Mail Date. _____.   |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____. | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|   | 6) <input type="checkbox"/> Other: _____.                                   |

## **DETAILED ACTION**

### ***Claim Objections***

Claim 2 is objected to because of the following informalities:

Claim 2 should be rewritten as:

--The method according to claim 1, wherein the master controller for controlling operations of the at least two chopping amplifier stage.—Note, claim 12.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 21, 23 recite the limitation "the non-overlapping periods". There is insufficient antecedent basis for this limitation in the claim. Should claims (21, 23) depend on claims (15, 5), respectively? Note, claims (15, 5) recited "non-overlapping period" claimed.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-4, 10-14, 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCartney (6,380,801), cited in Office Action mailed on February 03, 2005.

Regarding claims 1, 11, McCartney discloses the claimed invention except each of the chopping amplifier having a partial gain and wherein the overall gain is a sum of the partial gain amounts of the chopping amplifiers. McCartney (Figs. 1, 3, 5, 8-12) discloses an amplifier circuit comprising: two differential input stages (12, 14) coupled to a chop circuit (16), wherein chop circuit (16) is controlled by CHOP which can be read as a controller, as such differential input stages is functional equivalent as claimed chopping amplifier stages, wherein the amplifier having gain(s) is well known in the art. Therefore, one having ordinary skill in the art would have realized that each of differential input stages (12, 14) must have some inherent gain(s) which can be read as partial gain(s), and an overall gain is the sum of the inherent gain(s) of the differential input stages (12, 14) in an output stage (20) since the outputs of the differential input stages (12, 14) shared a common output stage.

Regarding claims 2, 11, wherein operations of on/off of switches in the chop circuit (16) are controlled by the CHOP (controller).

Regarding claims 3, 4, 13, 14, wherein Fig. 10 further discloses two chop circuits (120a, 102b) inherently seen independently controlled and having its own chopping operation as claimed in claim 4.

Regarding claims 10, 20, wherein stages (12, 14) are coupled in parallel.

***Allowable Subject Matter***

Claims 5-9, 15-19, 21-24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 21, 23 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Claims 5, 6, 15, 16, 21, 23 call for, among others, chop clock signals of the amplifiers have non-overlapping periods.

Claims 7-9, 17-19 call for, among others, wherein each amplifier contributes 1/N amount of an overall gain.

Claims 22, 24 call for, among others, operations of the circuit during switching/non-switching periods.

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The additional reference (Bakker et al. (Fig. 1)) shows schematic of a chopping circuit in a single stage chopping amplifier.

Art Unit: 2817

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khanh V. Nguyen whose telephone number is (571) 272-1767. The examiner can normally be reached from 8:00 AM - 3:30 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal can be reached on (571) 272-1769. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



**KHANH VAN NGUYEN  
PRIMARY EXAMINER  
Art Unit: 2817**